

REMARKS

Applicants note that their arguments filed 4/7/03 have been fully considered but are not found to be persuasive by the Examiner.

Drawings

Applicants note that the drawings are again objected to under 37 CFR 1.83(a). The Examiner states the drawings must show every feature of the invention specified in the claims. Therefore, the Examiner says, the heat pipe panel must be shown or the feature(s) canceled from the claim(s) and no new matter is to be entered.

The Examiner requests that a proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. It is noted that the objection to the drawings will not be held in abeyance by the Examiner.

Applicants respectfully submit that the previously filed amendment in the specification (Paper No. 3 filed April 1, 2002) satisfies the Examiner's objection in lieu of a drawing correction:

The paragraphs starting at Page 2, line 35 has previously been amended at Page 3, line 4 by inserting reference numerals 12 and 13 after "panels" and before ",". Applicants respectfully submit that radiator panels 12 and 13 are designated in said paragraph as heat panels (12, 13), therefore, obviating any necessity to amend the drawings and satisfying the Examiner's requirement that the heat pipe panel must be shown in the drawings. Applicants respectfully submit that heat panels 12, 13 are shown in Figure 1 and Figure 2 and accordingly, this objection to the drawings should be withdrawn since no further amendment to the drawings is required.

Specification

The Examiner has objected to the specification under 37 CFR 1.71 because the originally filed specification fails to disclose "a remotely-located heat source disposed...at a location that is remote from the heat dissipating system...; and a loop heat pipe thermally coupled between the heat source and the heat dissipating system."

Applicants again respectfully submit that there is sufficient disclosure for the limitation "a remotely located heat source disposed...at a location that is remote from the heat dissipating system" to be found in claims 3 and 5 as originally filed, and at Page 4, line 6 et seq. in the specification where it is stated "a heat source 14 is disposed 31 on a spacecraft 20 at a location that is remote from a thermal radiator (12, 13)" and is similarly mentioned several other places in the specification using alternative terminology.

Further, the Examiner states that "...; and a loop heat pipe thermally coupled between the heat source and the heat dissipating system" is not disclosed.

Applicants again respectfully submit that sufficient disclosure of a "loop heat pipe thermally coupled between the heat source and the heat dissipating system" is found at page 4, line 7 et seq. wherein it is stated "a heat transfer system 10 comprising a loop heat pipe 10 is thermally coupled 32 between the heat source 14 and thermal radiator (12,13). Heat generated by the heat source 14 is coupled 33 to the thermal radiator (12,13) by way of the loop heat pipe 10."

Further, at page 4, line 11 et seq. it is stated "thus, a heat transfer system comprising a loop heat pipe and heat transfer method that transfers heat from a remotely located heat source to a spacecraft thermal radiator have been disclosed."

The Examiner has rejected claims 1-6 under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The Examiner states that with regard to claims 3 and 5, the originally filed specification fails to disclose "a remotely-located heat source disposed...at a location that is remote from the heat dissipating system...; and a loop heat pipe thermally coupled between the...heat source and the heat dissipating system."

Applicants respectfully submit that in claims 3 and 4 as originally filed, for example, in claim 3 at line 2 it is claimed:

"a heat dissipating apparatus for radiating heat into space;

a heat source disposed at a location that is remote from heat dissipating apparatus; and

a loop heat pipe thermally coupled between the heat source and the heat dissipating apparatus for coupling heat generated by the heat source to the heat dissipating apparatus.”

In addition, as previously recited above, at page 4, line 6 et seq. in the specification, it is stated “a heat source 14 is disposed 31 on a spacecraft 20 at a location that is remote from a thermal radiator 12, 13. A heat transfer system 10 comprising a loop heat pipe 10 is thermally coupled 32 between the heat source 14 and the thermal radiator 12, 13. Heat generated by the heat source 14 is coupled 33 to the thermal radiator 12, 13 by way of the loop heat pipe 10.” Applicants respectfully submit that this subject matter was described in the specification in such a way as to reasonably convey to one skilled in the art that the inventors at the time the application was filed had possession of the claimed invention. Applicants respectfully contend that the originally filed specification does disclose “a remotely located heat source disposed...at a location that is remote from the heat dissipating system...; and a loop heat pipe thermally coupled between the...heat source and the heat dissipating system” in the claims and in the specification as recited above which is hereby respectfully incorporated by reference.

Accordingly, Applicants respectfully submit that this ground of rejection has been obviated.

The Examiner has rejected claims 1-6 under 35 U.S.C. § 102(b) as being anticipated by Esposto. The Examiner directs Applicants’ attention to at least Figure 1 and column 4, lines 20-22 of said reference.

Applicants respectfully submit that in Esposto (U.S. Patent No. 5,743,325) there is disclosed a closed-loop heat pipe transport design for a deployment application having a flexible section which connects to a payload structure and a deployable structure. The flexible section folds over itself while the deployable structure is stowed. Upon rotation of

the deployable structure around a predetermined axis, the flexible section unfolds, with a portion of the flexible section passing through the predetermined axis. When the deployable structure has completed its rotation and is fully deployed, the components of the flexible section will lie in substantially the same plane as previously pointed out by Applicants.

Applicants respectfully submit that in Figure 1 of Esposto, there is no designation of a heat dissipating system having a remotely located heat source which is not located on a heat pipe panel wherein a loop heat pipe thermally coupled between the remotely located heat source and the heat dissipating system couples the heat generated by the heat source to the heat dissipating system as required in the claims of the instant invention. Likewise, as previously pointed out by Applicants, these features of the claims of the instant invention are nowhere to be found in col. 4, line 11-14 wherein it is stated "Several possible positions of the serpentine section 20 are shown in FIG. 1. The serpentine section 20 is fastened on one end to the fixed radiator panel 14 and on the other end to the deployable radiator 10."

Applicants again respectfully conclude that this recitation clearly states that the serpentine sections of the heat pipe are fastened on one end to a fixed radiator and on the other end to a deployable radiator and nowhere is it expressly stated, implied or suggested that a loop heat pipe may be thermally coupled between a remotely located heat source and a heat dissipating system for coupling heat generated by the heat source to the heat dissipating system as set out in the claims of the instant invention.

Applicants do not at all understand and respectfully disagree with the Examiner's assertion that Applicants' originally filed specification at page 1, lines 4-14 have been contradicted by any of Applicants' statement regarding known prior art. Since the Examiner has not specifically pointed out or recited these statements, Applicants cannot further specifically address this assertion.

It is noted that again the Examiner reminds Applicants of their duty to disclose relevant prior art to the U.S. Patent and Trademark Office and that Counsel is reminded of

the duty to investigate the duty of disclosure with Applicants. See *Brasseler, U.S.A. I L.P. v. Stryker Sales Corp.*, 60 USPQ2d 1482 (CA FC 2001).

Applicants know of no specific prior art, which is responsive to the Examiner's request. Applicants respectfully submit that at the time the application was filed, Applicants had no knowledge of pertinent prior art as stated in their Declaration and they are not now aware of pertinent prior art responsive to the Examiner's request.

The Examiner concludes that in view of Applicants' statements on page 1, lines 1-17 of Applicants' instant specification, Applicants have knowledge of and design spacecrafts, where heat pipes radiate heat from the spacecrafts. Therefore, the Examiner concludes in applications filed under 35 U.S.C. 111(a), Applicants and other individuals substantively involved with the preparation and/or prosecution of the application have a duty to submit to the Office information which is material to patentability as defined in 37 CFR 1.56. The Examiner further states that provisions of 37 CFR 1.97 and 37 CFR 1.98 provide a mechanism by which patent applicants may comply with the duty of disclosure provided in 37 CFR 1.56.

Further, the Examiner states, Applicants and other individuals substantively involved with the preparation and/or prosecution of the patent application also may want the Office to consider information for a variety of other reasons; e.g., to make sure that the Examiner has an opportunity to consider the same information that was considered by these individuals, or by another patent office in a counterpart or related patent application filed in another country.

Applicants again respectfully submit that they know of no such other information responsive to the Examiner's request other than that alluded to by the Examiner as generally set out in the specification as filed.

It is noted that the prior art made of record and not relied upon is considered pertinent to Applicants' disclosure but Applicants respectfully contend that since this art has not been specifically applied, no further comment is deemed necessary with regard to it.

In view of the above remarks, Applicants respectfully contend that all of the claims presently under prosecution have been shown to contain patentable subject matter and to be patentably distinguishable over the prior art of record *Esposito*.

Accordingly, Applicants respectfully request that this application be reviewed and reconsidered in view of the above remarks and that a Notice of Allowance be issued at an early date.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'AW Karambelas', written in a cursive style.

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